

1 **WHAT IS CLAIMED IS:**

2 1. A filtering device for a portable beverage container, the filtering
3 device comprising:

4 a cap (10) adapted to detachably mount on the portable beverage
5 container and having a top face, a bottom face, a suction tube (12) extending
6 from the top face, a recess formed in the bottom face, a connecting tube (14)
7 formed on the bottom face inside the recess, and multiple ventilating holes
8 (16) defined through the cap (10); and

9 at least one filter element (20) detachably attached to the connecting
10 tube (14) to communicate with the suction tube (12) and adapted to be
11 accommodated inside the portable beverage container, wherein each one of
12 the at least one filter element (20) has a hollow shell, a filtering material (21)
13 filling inside the shell, and multiple holes defined through the shell to allow
14 water to pass through the filtering element (20).

15 2. The filtering device as claimed in claim 1, wherein the shell of
16 each one of the at least one filter element (20) is cylindrical and has a top
17 (23), a bottom end, an adjacent tube (22) formed on the top (23), and a
18 bottom cover (25) attached to the bottom end of the shell;

19 wherein the bottom cover (25) is a cap-shaped body received inside
20 the shell at bottom end and has a round top and a side wall formed around
21 the round top to define a notch to engage with the adjacent tube (22) of an
22 adjacent filter element (20).

23 3. The filtering device as claimed in claim 2, wherein the connecting
24 tube (14) of the cap (10) and the adjacent tube (22) of the filter element (20)

1 engaging with the cap (10) are engaged by means of wedges; and

2 the bottom cover (25) and the adjacent tube of the adjacent filter
3 element (20) are engaged by means of wedges.

4 4. The filtering device as claimed in claim 2, wherein the bottom
5 cover (25) of each one of the at least one filter element (20) is detachably
6 engaged with the bottom end of the shell by means of threads.

7 5. The filtering device as claimed in claim 3, wherein the bottom
8 cover (25) of each one of the at least one filter element (20) is detachably
9 engaged with the bottom end of the shell by means of threads.

10 6. The filtering device as claimed in claim 1, wherein the cap (10)
11 further has a movable hat (30) mounted on the suction tube (12), the movable
12 hat (30) is cylindrical and has:

13 a round top, an opening, a side wall with an inner periphery formed
14 around the round top, a water outlet (32) defined through the round top, a tab
15 (31) formed on the inner periphery of the side wall, and a plug (33) formed
16 under the round top to hermetically block the suction tube (12);

17 wherein the suction tube (12) further has a first end protruding out
18 from the top face of the cap (10), a limiting cutout (13) defined around an
19 outer periphery of the first end of the suction tube (12) to movably receive
20 the tab (31) of the movable hat (30).

21 7. The filtering device as claimed in claim 1, wherein cap (10)
22 further has an O-ring (45) attached on the bottom face of the cap (10) and a
23 membrane (451) extending from the O-ring (45), to abut the bottom face of
24 the cap (10) to detachably cover the multiple ventilating holes (16).

1 8. The filtering device as claimed in claim 6, wherein the cap (10)
2 further has an O-ring (45) attached on the bottom face of the cap (10) and a
3 membrane (451) extending from the O-ring (45), to abut the bottom face of
4 the cap (10) to detachably cover the multiple ventilating holes (16).

5 9. The filtering device as claimed in claim 1, wherein the suction
6 tube (12) further has an end extending from the bottom face of the cap (10)
7 within the connecting tube (14).

8 10. The filtering device as claimed in claim 6, wherein the suction
9 tube (12) further has a second end extending from the bottom face of the cap
10 (10) within the connecting tube (14).

11 11. The filtering device as claimed in claim 1, wherein the filtering
12 device has:

13 one filter element attached (20) to the cap (10); and
14 a resilient tube (60) engaging with filter element (20).

15 12. The filtering device as claimed in claim 2, wherein the filtering
16 device has:

17 at least two filter elements (20) attached to the cap (10) in alignment;

18 and

19 a resilient tube (60) engaging with a lowermost filter element among
20 the at least two filter elements (20).

21 13. The filtering device as claimed in claim 1, wherein the cap (10)
22 further has two ears (15) formed at two opposite sides of the cap (10) and
23 adapted to secure with a belt to conveniently suspend the plastic beverage
24 container (50).

1 14. The filtering device as claimed in claim 3, wherein the bottom
2 cover (25) of each one of the at least one filter element (20) is detachably
3 engaged with the bottom end of the shell by means of threads and wedges.

4 15. The filtering device as claimed in claim 5, wherein the bottom
5 cover (25) further comprises:
6 a rectangular slit (254) having two long sides and two short sides
7 formed under the round top, wherein each short sides has a dent defined at a
8 distal edge of the short side; and
9 a pair of inclined cutouts (255) oppositely defined in edges around
10 the opening in alignment with the two short sides.

11 16. The filtering device as claimed in claim 12, wherein the bottom
12 cover (25) further comprises:
13 a rectangular slit (254) having two long sides and two short sides
14 formed under the round top, wherein each short sides has a dent defined at a
15 distal edge of the short side; and
16 a pair of inclined cutouts (255) oppositely defined in edges around
17 the opening in alignment with the two short sides.